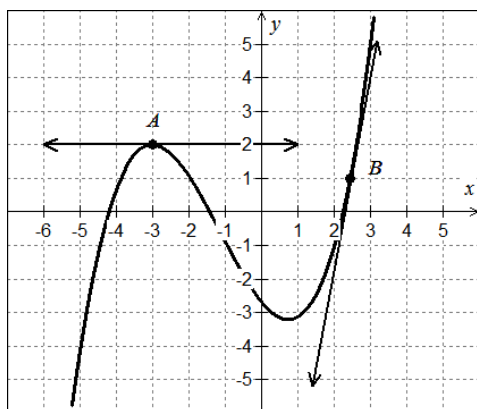
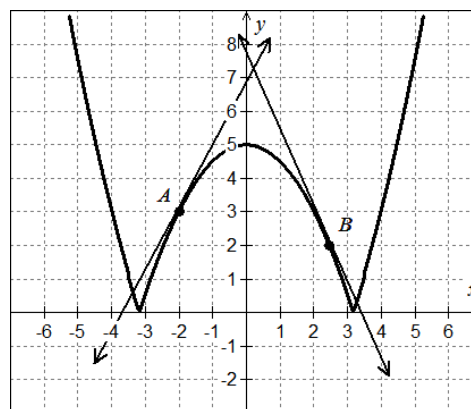


Estimate the slope of the graph at the points  $A$  and  $B$ .

1.



2.



Find the derivative by the limit process. Use proper notation and algebraic procedures. Then, evaluate at the given point.

3.  $f(x) = x^2 - 6$  at  $(1, -5)$

4.  $f(x) = x^3 - 3x$  at  $(0, 0)$

5.  $f(x) = \sqrt{x+2}$  at  $(-1, 1)$

6.  $f(x) = \frac{1}{x^2}$  at  $(2, \frac{1}{4})$

Find the equation of the tangent line to the graph of  $f$  at the given point, using the problems from questions #3-6. Leave your answer in point-slope form.

7.  $f(x) = x^2 - 6$  at  $(1, -5)$

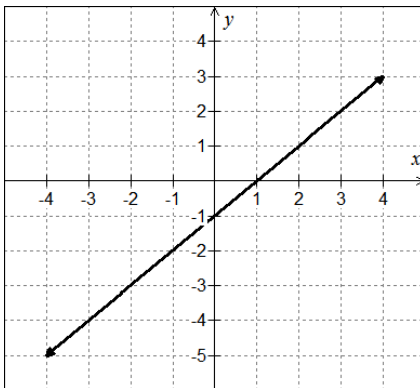
8.  $f(x) = x^3 - 3x$  at  $(0, 0)$

9.  $f(x) = \sqrt{x+2}$  at  $(-1, 1)$

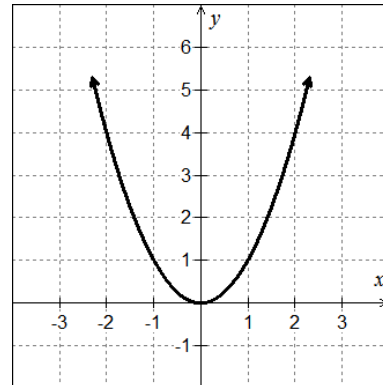
10.  $f(x) = \frac{1}{x^2}$  at  $(2, \frac{1}{4})$

The graph of  $f$  is given. Sketch the graph of  $f'$ . Explain how you know.

11.

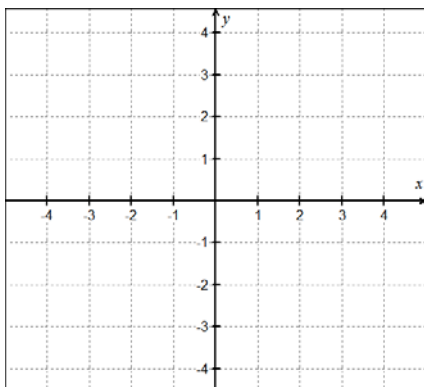


12.



Sketch a graph of a function with the following characteristics.

13. The derivative is always positive.



14. The derivative is increasing everywhere.

